



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/570,901	03/07/2006	Thomas Lechner	9560-4	1626
54414 7590 07/21/2010 MYERS BIGEL SIBLEY & SAJOVEC, P.A. P.O. BOX 37428 RALEIGH, NC 27627				
EXAMINER				
TRAN, CON P				
ART UNIT		PAPER NUMBER		
2614				
MAIL DATE		DELIVERY MODE		
07/21/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/570,901

Applicant(s)

LECHNER, THOMAS

Examiner

CON P. TRAN

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 03/07/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 14 is rejected under 35 U.S.C. 101 because the claim is not to a process, machine, manufacture, or composition of matter. In the state of the art, transitory signals are commonplace as a medium for transmitting computer instructions and thus, in the absence of any evidence to the contrary and given a broadest reasonable interpretation, the scope of a "computer readable storage medium" covers a signal per se. A transitory signal does not fall within the definition of a process, machine, manufacture, or composition of matters.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 1-5, and 7-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Wachi et al. U.S. Patent Application Publication 20010049994 (hereinafter, "Wachi").

Regarding **claim 10**, Wachi teaches *an apparatus for rendering* (hardware of a musical tone synthesis system, Fig. 14; see par. [0166]) *sampled data from a music file according to a transmission characteristic of a loudspeaker* (speaker, electro-acoustic converter, see par. [0047] *of a mobile terminal of a wireless communication system* [mobile phones, see par. [0147], *the apparatus comprising:*

storage means for storing the music file (standard MIDI format, see [0068], [0182]) *and data related to transmission characteristics of one or more loudspeakers* (memory 122, 124, Fig. 14 in portable phone; see [0182]),

selection means (input device 8, Fig. 1, [0047]; 108, Fig. 14, [0166]) *for selecting data for a particular loudspeaker* (see [0047]) *from the storage means* (memory 122, 124, Fig. 14 in portable phone; see [0167], [0182]),

low frequency sound identification means (pseudo low tone synthesis 60, Fig. 3; see para. [0059]) *for identifying audio data in the music file* (standard MIDI format, see [0068], [0182]) *which represent a sound with a spectral component below a transmission frequency range of the particular loudspeaker corresponding to the selected data* (is determined in accordance with a characteristic of an electro-acoustic converter of the portable phone, see [0175]),

control means (amplitude control portion 172, Fig. 19; pseudo low

tone control data, see [0152], [0278]) *for controlling a modification of a sound reproduction from the identified audio data such that the modified sound reproduction yields a sound spectrum having an increased energy content within the transmission frequency range of the particular loudspeaker as compared to a sound spectrum (the harmonic synthesis system, see [0158], [0283]) of an unmodified sound reproduction (see 0219, 0220)); and*

synthesizing means (pseudo low tone synthesis portion 60, Fig. 3) for synthesizing sampled data from a modified music file (see [0059]),

wherein the control means (amplitude control portion 172, Fig. 19; pseudo low tone control data, see [0152], [0278]) modifies the music file to provide the modified music file by replacing a specification of an instrument provided in the music file for the identified audio data with a substitute specification of an instrument having brighter timbre and/or by transposing frequency data in the music file to a higher frequency range, i.e., (a frequency (240 Hz) higher than the lowest frequency (120 Hz) by one octave is set as the pseudo low tone start frequency, see [0272]).

Regarding **claim 11**, Wachi teaches an apparatus according to claim 10, wherein the control means is configured to store modified audio data representing the modified sound reproduction in a music file in the storage means of the apparatus (see [0104]).

Regarding **claim 12**, Wachi teaches an apparatus according to claim 10, wherein the control means is configured to modify the sound reproduction at a time a respective music file is replayed via the loudspeaker (see [0175]).

Regarding **claim 1**, this claim merely reflects the method to the apparatus claim of claim 10 and is therefore rejected for the same reasons.

Regarding **claim 2**, Wachi teaches a method according to claim 1, wherein the instrument of the substitute specification belongs to a same category of instruments as the instrument of the specification provided in the music file (MIDI, see [0182]).

Regarding **claim 3**, this claim merely reflects the method to the apparatus claim of claim 12 and is therefore rejected for the same reasons.

Regarding **claim 4**, this claim merely reflects the method to the apparatus claim of claim 10 and is therefore rejected for the same reasons.

Regarding **claim 5**, Wachi teaches a method according to claim 4, wherein the transposition shifts the sound spectrum of the modified sound reproduction such that the lower end of the sound spectrum of the modified sound reproduction is located within the transmission frequency range of the loudspeaker (a cut-off frequency (lowest

or critical frequency) is determined in accordance with a characteristic of an electro-acoustic converter of the portable phone, see [0175]).

Regarding **claim 7**, Wachi teaches a method according to claim 4, wherein the modified sound reproduction is based on a modified parameter file (i.e., loudness of the sound; see [0220]).

Regarding **claim 8**, Wachi teaches a method according to claim 4, wherein the modified sound reproduction is based on a modified FM-spectra file (see [0283]).

Regarding **claim 9**, Wachi teaches a method according claim 4, wherein a format of the music file corresponds to a MIDI data file format (see [0182]).

Regarding **claim 13**, this claim has similar limitations as Claim 10. Therefore it is interpreted and rejected for the reasons set forth in the rejection of Claim 10. It is noted Wachi teaches mobile phone including sound board and speaker (see [0047], [0147], [0175])

Regarding **claim 14**, this claim merely specifies a computer-readable storage medium of claim 10 and is therefore interpreted and rejected for the same reasons.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wachi et al. U.S. Patent Application Publication 20010049994 (hereinafter, "Wachi").

Regarding **claim 6**, Wachi teaches a method according to claim 5. However, Wachi does not explicitly disclose wherein a main energy content of the sound spectrum of the modified sound reproduction is located within a frequency range from about 5 kHz to about 10 kHz.

Wachi further discloses the upper limit of the reproduction frequency is set to approximately 15 to 20 kHz; to the pseudo low tone waveform data 52, Fig. 3, it is good enough that the upper limit of the reproduction frequency is approximately 2 kHz (although it depends on the lowest frequency data 50), see para. [0066].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, those of ordinary skill in the art when facing a design need of providing a main energy content of the sound spectrum of the modified sound reproduction is located within a frequency range from about 5 kHz to about 10 kHz would

have recognized and would have been obvious to try to utilize a frequency range between "a good enough" upper limit of the pseudo low tone, i.e., 2 kHz, and the set upper limit of the reproduction frequency, i.e., 15 kHz, such that to obtain a main energy content of the sound spectrum of the modified sound reproduction as claimed since there are a finite number of identified, predictable potential solutions (e.g., 3 kHz, 5 kHz, 7 kHz, 9 kHz, 11 kHz, 13 kHz) to the recognized need (i.e., modifying), and one of ordinary skill in the art could have pursued the known potential solutions with a reasonable expectation of success. The motivation is for purpose of easing the unpleasant sensation, as suggested by Wachi in paragraph [0176].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is (571) 272-7532. The examiner can normally be reached on M - F (8:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Vivian C. Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2614

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/CPT/

July 20, 2010

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2614